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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them	)	PR Docket No. 92-235

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FCC - MAIL ROOM

COMMENTS
OF THE
ARIZONA DEPARTMENT OF CORRECTIONS

COMES NOW the State of Arizona, Department of Corrections ("ADC"), by its Assistant Director for Administration, and hereby submits these comments in response to the *Notice of Proposed Rulemaking* ("NPRM") issued by the Federal Communications Commission ("FCC") in the above-captioned matter. In support thereof, the following is respectfully shown.

I. Standing

1. ADC is responsible for the operation of all state correctional institutions throughout the State of Arizona. Presently, ten prison complexes, two stand-alone prisons, and one correctional release center house over 17,000 incarcerated felons

to the safe, efficient and orderly operations of ADC.[1] At present, ADC operates over five thousand (5,000) portable and mobile two-way radios throughout the state, pursuant to some 39 FCC radio station licenses issued in the Police Radio Service, and 17 FCC radio station licenses issued in the Local Government Radio Service. ADC has a significant investment in two-way radio equipment, with a book value presently in excess of eight million dollars ($8,000,000.00.) Simply put, without its radio network, ADC asserts that a significant and real threat to the public safety would be created.

3. ADC is the single largest fleet operator of portable and mobile two-way radios, and one-way pagers, amongst all governmental radio users (federal, state, county or local) located within the boundaries of the state of Arizona.

4. The instant rule making matter portends a significant impact upon the radio operations of ADC, and accordingly, the comments to be provided by ADC herein are relevant to and should be given careful consideration by the FCC in formulating any final rules.

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[1] As examples, two-way radios are utilized by correctional service officers providing policing and security at the prisons; correctional service officers transporting inmates; correctional service officers policing inmate work crews outside of prison confines; parole officers in the field; investigators on assignment; chase teams pursuing escaped inmates; and inmates providing fire protection services on prison property as well as at federal and state forests.

II. Background

5. The FCC should be commended for its desire to take a forward planning look at the two-way radio needs of the land mobile user community, not just for the immediate future, but for the far off future. Often times government agencies, such as the ADC and the FCC, are lambasted by its critics for having "tunnel vision" and not thinking forward enough. While ADC commends the FCC for its forward thinking, ADC is also concerned, as will be shown herein, that perhaps the FCC has thought too forward into the future with not enough consideration being given to the immediate needs of licensees, the capabilities of existing equipment, or how to gracefully move to the futuristic goals. In more blunt terms, the FCC has provided an itinerary of where to start, where to go, and a timetable within which this must be accomplished, but the FCC has failed to allow sufficient time for the necessary roads and bridges to be put into place to allow private land mobile users to get from the point of origin to the destination!

III. Is There a Spectrum Shortage to Solve?

6. There is great debate as to whether or not there is a real or artificial shortage of radio spectrum, or whether there is a shortage at all. Even in the NPRM, the FCC notes:

> "A study of our licensing database in April, 1992, showed very wide variations in usage, often exceeding factors of ten for channels in the same frequency band designated for different radio services." [NPRM, ¶14.]

Nonetheless, ADC agrees that now is the time to do some forward planning to provide for expanded capability and use of existing spectrum allocations in the distant future. However, ADC disagrees

with the short timetable within which the FCC is attempting to cause this major technological shift to occur.

7. The NPRM proposes that major modifications must occur to every existing land mobile radio transmitter within the next two years (by January 1, 1996). Some of these transmitters will be incapable of being modified. All existing receivers will be obsolete, and the switch over to "narrowband" technology will only cause an increased level of interference to these existing receivers. Bluntly told, the FCC appears to be moving with excessive haste and a lack of careful review and planning. ADC, like most government agencies, works from a ten year plan. For the FCC to expect government agencies, let along private-sector businesses, to be able to implement this major change in radio systems on such a short timetable is utterly ridiculous.

IV. The Economic Hardships Upon Licensees Has Been Overlooked

8. ADC presently operates over 5,000 mobile radios, and an additional 1,000 paging receivers. Approximately one-half of ADC's existing radio fleet is less than three years old. ADC's radio fleet has steadily grown over the past decade along with the rising inmate population, and those radio units removed from operation are not removed because of age, but instead because of physical destruction while in use. ADC has received estimates of $70 to $100 per radio to modify the transmitter deviation as required. All of ADC's pagers will have to be replaced. Further, ADC has been advised that approximately thirty percent (30%) --- or 1,500 units --- of its existing radios will have to be replaced, at

an estimated cost of $1,800 per radio, because they will not be able to be modified and comply with the FCC's technical requirements after January 1, 1996.

9. Put into dollars and cents, the FCC's present proposal will require that ADC must outlay the sum of over THREE MILLION DOLLARS ($3,000,000.00) between now and January 1, 1996 just to meet the interim emission requirements. By January 1, 2005, ADC will then have to totally scrap each and every piece of existing radio equipment, and fund an entirely new radio network, at a cost to the taxpayers in the tens of millions of dollars.

10. Over the past two years, ADC has undergone a massive upgrading and expansion of its existing radio system, costing several hundred thousand dollars in taxpayer dollars. It is not uncommon for fixed station equipment to have a useful life of twenty years, and for portable and mobile radio equipment to have a useful life of twelve to fifteen years. The FCC's proposal will unnaturally and unnecessarily cut short the life of much of ADC's existing equipment.

11. ADC's existing radio network provides coverage over almost every state and interstate highway within Arizona, over which routes ADC's correctional service officers transport inmates on a daily basis. ADC's radio network provides an essential life-safety check to these officers. Reduced bandwidth means less range from existing systems. The FCC's proposal to migrate radios to lesser occupied bandwidth by January 1, 1996 will translate into a marked decrease in coverage area of ADC's radio network, creating substantial areas where correctional service officers will be

unable to communicate with their dispatcher, thus creating a substantial life/safety risk and peril for these officers. While the FCC might simply say that the solution is to build additional mobile relay sites along these routes, this solution is impractical because of the multi-year forward planning which government

not believe that this is the "economic revival" that President Clinton has talked so much about.

14. Instead, ADC believes that the FCC's timetable must be substantially altered to accommodate the needs of existing systems, and yet provide for a smooth and orderly transition to narrowband technologies.

V. Narrowband Exists --- Is it a Failed Experiment???

15. The FCC has provided for narrowband systems in its rules since 1985.[3] Yet, despite over eight years of existence, there have been relatively few applicants for any of these frequencies. If there truly were a scarcity of radio spectrum, one would think that applicants would be fighting each other for this virgin spectrum. But such is not the case. Careful analysis must be given as to why this phenomenon exists, but this very relevant fact appears to have been totally ignored by the FCC.

16. ADC believes that an orderly transition to narrowband technology can occur without need for an "interim" step, and without need to create the wholesale abandonment of existing radio systems and equipment.

17. ADC supports a plan whereby the FCC would set a date in the short-term future (e.g., January 1, 1996) whereby applications for new "wideband" systems would no longer be

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gouging by equipment manufacturers and dealers can and will occur. However, if a graceful transition were to occur, the ability of manufacturers and dealers to gouge will be substantially diminished.

[3] See FCC Rule Section 90.271, added by Order in Docket No. 84-279, effective May 6, 1985, 50 FR 13596.

accepted, and applicants for new systems would have to apply for the existing narrowband frequencies (i.e., in the VHF bands, presently removed from existing VHF frequencies by 2.5, 7.5, and 12.5 kHz).[4] Existing wideband system would be allowed to make limited types of modifications (i.e., relocate base stations within existing service areas, decrease power/antenna height, etc.), and would be required to provide interference protection to narrowband systems.[5]

18. In addition, as a "carrot" to applicants, the FCC should provide for some sort of frequency exclusivity to narrowband operations to encourage development of and migration to narrowband technology.[6] Similar exclusivity should not be provided to wideband systems.

19. The FCC should allow wideband and narrowband systems to co-exist for at least ten years, at which time the FCC should ascertain the percentage of narrowband versus wideband systems. At such time thereafter that the number of narrowband systems exceeds the number of wideband systems, the FCC should then set a five to

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[4] Similarly, in the UHF bands, narrowband assignments could be made on frequencies 6.25, 12.5, and 18.75 kHz removed from existing wideband assignments. Existing low-power wideband frequencies which are 12.5 kHz removed from existing high-power wideband frequencies portend less threat to narrowband systems because of their low power and secondary status.

[5] With regard to interference protection, ADC recommends that distance separation requirements be set forth for initial narrowband base stations operating 2.5 kHz removed from existing wideband base stations. This has worked well for wideband assignments 15 kHz removed from each other.

[6] Such as the FCC's proposed "exclusive use overlay."

seven year window during which time the remaining wideband systems

briefly touched upon this reality in its NPRM.[8] [9] Instead, defined engineering and loading standards must be set forth such that any applicant, using any qualified telecommunications engineer or service, can tender an application directly to the FCC.[10]

23. The nemesis of efficient use of existing spectrum has been a sloppy frequency coordination and over-powered systems. Applicants must be able to define and justify a mobile service area. Just as initial cellular system applicants were only allowed to provide coverage throughout a Standard Metropolitan Statistical Area and not beyond, land mobile applicants should only be allowed to provide coverage to the extent of their required and defined service area. A rural town fire department providing service to a community of 5 square miles does not need a mobile relay system located atop a mountain ten miles away with an effective radiated power of 600 watts. Yet, these types of over-engineered systems are legion throughout the private radio services. While the FCC's proposal to impose height-power limits is a step in the right direction, applicants should also be required to demonstrate their

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[8] NPRM, at ¶14: ".. the current allocation system... inhibits spectrum efficiency." Also, footnote 29: "[The Joint Commenters note] problems such as users having confidence in the coordination system."

[9] NPRM, at ¶19: "Currently, frequency coordination is a process in which each applicant was given the best assignment possible. In the future, frequency coordinators should strive to retain as large a spectrum reserve as possible. ... vertical loading... rather than ... horizontal loading."

[10] Since the FCC's licensing database is available to the public on an on-line basis, the accuracy of such engineering studies will be certain to be high caliber. The existing frequency coordination procedure leaves much to be desired in the form of accuracy.

minimum required service area.

VIII. Conclusion

24. While the FCC's proposal to implement narrowband technologies is commendable, the timetable and action plan set forth by the FCC is unrealistic and will create a devastating hardship (both financially and operationally) upon all but a few. Instead, ADC asserts that a longer transition period is necessary, and this longer transition can be accomplished without preventing the migration to narrowband technology, and without creating devastating hardships upon existing wideband licensees.

WHEREFORE, THE PREMISES CONSIDERED, the State of Arizona, Department of Corrections, respectfully prays that the Federal Communications Commission give full, faithful and careful consideration to these comments.

Respectfully Submitted,

STATE OF ARIZONA
DEPARTMENT OF CORRECTIONS

Date: May 25, 1993

By: _____
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